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Impact of E-Commerce Flash Sale Promotions on Generation Z's Impulse Buying Behavior: The Mediating Role of Fear of Missing Out (FOMO)

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Abstract

This study examined whether e-commerce flash sale promotions influence the impulse buying behavior of Generation Z consumers and investigated whether the fear of missing out mediates this relationship. It addresses the gap in existing literature by exploring this relationship in the context of the Philippines, a developing country that is underrepresented in prior studies that mostly focused on Western and East Asian regions. A quantitative, descriptive-correlational design was used, which was deemed appropriate as it provides insights into a phenomenon by examining the relationships among the variables involved. The study involved 266 Filipino Generation Z respondents selected through a nonprobability purposive sampling technique, with data collected via an online survey using a structured questionnaire and a five-point Likert scale. Data analysis and mediation analysis were conducted using Jamovi statistical software. Findings revealed that flash sale promotions significantly influence impulse buying behavior ($p < 0.0209$). Furthermore, FOMO was found to mediate this relationship, supporting the Stimulus-Organism-Response (S-O-R) framework. Although the theory of social influence was not directly tested, its role was implicitly considered within the construct of fear of missing out, which appears to amplify impulsive purchase decisions among Generation Z consumers. The study also found that demographic variables alone do not sufficiently explain the impulsive buying tendencies of Gen Z consumers. These findings offer valuable insights for online retailers and digital marketers aiming to increase engagement among Generation Z shoppers. By understanding the psychological drivers behind impulse purchases, particularly emotional and social factors, businesses can design more targeted and effective promotional strategies. Marketers are advised to tailor flash sale promotions based on Generation Z's behavior and preferences—especially for fashion-related products and platforms like Shopee—to increase engagement, encourage repeat purchases, and foster brand loyalty. While fewer respondents favored SHEIN and Lazada, maintaining a presence on these platforms can still help increase market reach and brand visibility.

Keywords: flash sale promotions, FOMO, generation z, impulse buying behavior, S-O-R

Introduction

E-commerce flash sale promotions have been utilized by marketers as a marketing strategy to attract consumers and stimulate impulsive buying behavior, particularly among Generation Z, who are known for being application-friendly and website-savvy, as most of their daily activities are conducted online (Ayuni, 2019). The attractiveness of flash sale promotions could capture the attention of consumers and drive impulsive purchases (Hermawan & Rofiq, 2024). A study by Hidayah et al. (2025) found that when flash sales are held more often, Generation Z consumers are more likely to make impulsive purchases.

One of the psychological factors in this context was the Fear of Missing Out (FOMO), which encouraged consumers to make impulse purchases to avoid missing out on something valuable (Patov, 2024). FOMO is applied in e-commerce as a marketing strategy that makes consumers feel as if they are losing something if they do not buy the products. Marketers create a sense of product scarcity through phrases like "limited offer," "only available for a short time," and "limited quantity". These modes of advertising have been effective in boosting demand for products and triggering FOMO (Fear of Missing Out) tendencies. This perceived scarcity can increase the value of goods (Cheng & Lim, 2016) and make FOMO more effective (Hodkinson, 2019). These studies collectively suggest that impulse buying is not only triggered by flash sale promotions but also intensified by internal emotional states such as FOMO.

With the increase in the market performance of e-commerce and the number of online shoppers, Generation Z has become a growing segment of online shoppers, known for being digitally native, which presents unique challenges and opportunities for marketers due to their distinct shopping behaviors (Salam et al., 2024). The majority of Generation Z makes purchases using online platforms, showing how e-commerce has a big impact on their impulsive purchasing decisions (Tran, 2024). Also, their constant exposure to e-commerce platforms and high mobile usage makes them more prone to emotion-based decisions and persuasive digital marketing tactics. This shows how flash sale promotions, FOMO, and the online behavior of Gen Z interact in shape impulsive buying behavior. However, gaps remain in understanding how these factors operate in specific cultural context such as the Philippines.

A systematic literature review conducted by Redine et al. (2023) found that the majority of studies on this topic were conducted in just three countries—the US, China, and Taiwan—raising concerns about the generalizability of findings across different cultural contexts. Very few studies explore how these factors behave in the developing country like the Philippines, despite it being one of the fastest-growing e-commerce markets.

To address this gap, the present study explores impulse buying behavior in a developing country, the Philippines, thereby enhancing the global perspective on consumer behavior. Furthermore, while previous research has focused heavily on personality traits, cultural influences, and general promotional strategies, there remains limited exploration of how specific sales promotional strategies, like flash sales, influence impulse buying behavior. This study fills that gap by focusing on flash sale promotions and their psychological impact, particularly through the lens of FOMO, in the context of Generation Z consumers in the Philippines.

This study used the Stimulus-Organism-Response (S-O-R) Theory to investigate the role of Fear of Missing Out (FOMO) as a mediating variable in the relationship between flash sale promotions and impulse buying behavior. Understanding this relationship is beneficial for businesses, particularly marketers, as they can develop more effective and responsible marketing strategies that ultimately lead to increased impulse buying. The study is also valuable to both small and large businesses on e-commerce platforms, enabling them to better connect with Generation Z by tailoring their promotional

campaigns to a demographic that is growing rapidly in the digital marketplace. This can help increase sales and enhance customer loyalty. In line with this, the study generally aimed to examine whether flash sale promotions influence the impulse buying behavior among Generation Z and to evaluate whether FOMO mediates the relationship between flash sale promotions and impulse buying behavior.

Specifically, the study intended to present the demographic profile of Generation Z respondents; describe their preferences and consumer behavior, including e-commerce platform preferences, product preferences, online purchase frequency, flash sale spending, and frequent flash sale participation; find out whether demographic characteristics are significantly associated with impulse buying behavior; and provide e-commerce platforms with actionable insights to improve flash sale strategies based on these findings.

Materials and Methods

A quantitative, descriptive-correlational research design was employed to examine the relationship between flash sale promotions, fear of missing out (FOMO), and impulse buying behavior among Generation Z consumers. This design allowed the study not only to describe the characteristics and preferences of the respondents but also to assess the associations and mediation effects between variables. This approach provides insights into the nature of relationships between variables (Seeram, 2019). A comparative analysis was also used to determine whether significant differences in impulse buying behavior exist based on demographic factors. . Different statistical tests were applied to determine if the demographic variables had a significant association with impulse buying behavior among Generation Z. Non-parametric statistical tests were used since the normality test showed that the data did not follow a normal distribution.

A non-probability purposive sampling technique was used to select respondents who met the inclusion criteria. This sampling technique was chosen since the study focused on Generation Z respondents who have participated in e-commerce and flash sales promotions, which are not randomly distributed in the general population. This approach allowed the researchers to select the respondents who possessed the required criteria, making the data collected relevant to the study objectives. According to Obilor (2023, as cited in Kgarimetsa & Naidoo, 2024), this approach enhances credibility by eliminating irrelevant responses. However, purposive sampling limits the generalizability of the findings, as the sample may not represent the broader population. This approach may carry a sampling bias, as the selection process was purposeful and selective. As a result, the findings may not fully represent the diversity of Generation Z consumers.

Descriptive statistics, specifically frequency distribution and percentages, were applied to present the demographic variables. Based on Roscoe (1975, as cited in Memon et al., 2020), a sample size between 30 and 500 is adequate for behavioral studies. A minimum of 200 respondents is required to perform confirmatory factor analysis (CFA) (Alavi et al., 2020). Data collection was carried out using a structured online survey questionnaire. A five-point Likert scale, with responses from 1 (strongly disagree) to 5 (strongly agree), was employed to assess agreement levels regarding flash sale promotions, FOMO, and impulse buying behavior.

To protect respondents' rights and confidentiality, this study followed ethical standards. An informed consent form explaining the purpose of the study and the intended use of data from the respondents was provided to the respondents. Respondents had the right to discontinue participation in the online survey at any time, and the participation was entirely voluntary. To maintain confidentiality, the names of the respondents were not collected, and other personal information was anonymized and stored securely. These protocols were strictly followed to ensure respect for participants and adherence to ethical

research practices.

Mediation analysis was performed using Jamovi software, following the Baron and Kenny (1986) mediation approach:

- (1) testing the direct relationship between the independent and dependent variables;
- (2) testing the relationship between the independent variable and the mediator.
- (3) testing the relationship between the mediator and the dependent variable; and
- (4) testing the combined effect of the independent and mediator variables on the dependent variable.

Reliability Analysis

Reliability was evaluated using Cronbach's Alpha, and the results indicated that all constructs achieved acceptable reliability, with values exceeding the recommended threshold of 0.70. This suggests that the survey questions for each construct were highly interrelated and measured their respective concepts reliably. Results are summarized in Table 1.

Table 1

Reliability Analysis of Study Constructs

Constructs	No. of Items	Cronbach's Alpha	Interpretation
Flash Sale Promotions	5	0.776	Reliable
Fear of Missing Out (FOMO)	7	0.849	Reliable
Impulse Buying Behavior	6	0.891	Reliable

Confirmatory Factor Analysis

A Confirmatory Factor Analysis was used to evaluate the reliability and validity of the constructs. The model-fit measures of CFA were used to assess further the overall goodness of fit of the three-factor model (Flash Sale Promotions, Fear of Missing Out, and Impulse Buying Behavior). Given the large sample size, a chi-square (χ^2) value of 346 was expected, and was statistically significant with a p-value $<.001$ and does not necessarily imply poor model fit. The chi-square test is not the only determining factor in assessing model fit (West et al. 2012). The values of CFI and TLI were above 0.90, and the values of SRMR and RMSEA were 0.0484 and 0.0781, respectively, all indicating a good fit for the model. The indices suggest that the model fits the data well and is highly valid. Table 2 presents the CFA model fits results.

Table 2

CFA Model Fit Results

Fit Indices	Recommended Value	Obtained Value
χ^2		346
p-value	Nonsignificant	$<.001$
CFI	$>.90$	0.930
TLI	$>.90$	0.919
SRMR	$<.08$	0.0484
RMSEA	$<.08$	0.0781

Construct Reliability was assessed using Cronbach's Alpha and Composite Reliability. The Cronbach Alpha for each variable in the study was found to be over the required limit of 0.70. Composite Reliability ranged from 0.851 to 0.963, which was above the recommended threshold of 0.70 as suggested by Hair et al. (2010). Convergent validity was assessed through the Average Variance Extracted (AVE). All constructs exceeded the threshold value of 0.50, except for the flash sale promotions variable, which

obtained an AVE of 0.412.

According to Lam (2012), if the AVE is less than 0.50, and the CR is higher than the acceptable threshold of 0.60, the study should be continued. Since the CR for flash sale promotions variable was higher than 0.60, the items were retained in the study. Thus, the study has good reliability and convergent validity of all the items in the construct. The detailed data can be seen in Table 3.

Table 3

Results of Factor Loadings, Cronbach Alpha, Composite Reliability and AVE

Variables	Item	Factor Loadings	Cronbach Alpha	CR	AVE
Flash Sale Promotions	The number of discounts during the flash sale makes me want to shop online.	0.619	0.775	0.851	0.412
	I often follow flash sale promotions when I'm going to buy online.	0.617			
	I feel the flash sale promotion gives me a relatively shorter time to decide.	0.606			
	The limited availability of products on flash sales makes me feel like I must make a quick decision.	0.681			
	The promotions in the flash sale are very interesting.	0.682			
Fear of Missing Out	I feel anxious during flash sales and buy more than I need.	0.759	0.935	0.963	0.675
	I visit online stores during flash sales, even when busy, due to Fear of Missing Out (FOMO)	0.848			
	I make impulsive purchases during flash sales because of FOMO	0.859			
	I constantly check flash sale deals due to FOMO	0.861			
	I fear others are getting better deals from flash sales than me	0.847			
	I fear my friends are purchasing great products in flash sales while I miss out	0.797			
	It is important that I stay updated on limited-time promotions and discounts	0.775			
Impulse Buying Behavior	I buy things spontaneously during e-commerce flash sales.	0.733	0.911	0.948	0.633
	I often buy things I didn't plan on during flash sales	0.808			
	I quickly buy items when I see a limited time deal in a flash sale.	0.820			
	I worry about missing a great deal if I don't buy during flash sale.	0.766			
	I feel the urge to buy now and think about my decision later when shopping during flash sales.	0.862			
	I base my decisions on emotions while shopping in flash sales.	0.777			

Results and Discussion

Socio-Demographic Profile of the Respondents

A total of 376 respondents participated in the study; however, after applying the inclusion and exclusion criteria, only 266 respondents were considered in the analysis. The socio-demographic profile

of the respondents, as shown in Table 4, reveals that a number of respondents were aged 18 to 22 (45.1%), female (57.9%), at the college level (44.0%), and had a monthly income or allowance of less than 1,000 (48.1%).

Table 4

Socio-Demographic Profile of Respondents

		Frequency	Percentage
Age	13 – 17	62	23.3%
	18 – 22	120	45.1%
	23 - 28	84	31.6%
Gender	Male	112	42.1%
	Female	154	57.9%
Educational Attainment	Elementary graduate	1	0.4%
	Junior High School level	23	8.6%
	Junior High School graduate	4	1.5%
	Senior High School level	43	16.2%
	Senior High School graduate	15	5.6%
	College level	117	44.0%
	College graduate	52	19.5%
	Post-graduate	11	4.1%
Income	Less than 1,000	128	48.1%
	1,001 – 4,999	71	26.7%
	5,000 – 9,999	19	7.1%
	10,000 – 14,999	10	3.8%
	15,000 – 19,999	5	1.9 %
	20,000 – 24,999	8	3.0%
	25,000 – 29,999	8	3.0%
	30,000 and above	17	6.4%

*n=266

Preferences and Consumer Behavior of the Respondents

Table 5

Frequency and Percentage Distribution of E-commerce Platform and Product Preferences

Preference Type	Sub-category	Frequency	Percentage
E-commerce Platform Preference	Shopee	211	79.3%
	Lazada	21	7.9%
	SHEIN	28	10.5%
	Zalora	1	0.4%
	Temu	5	1.9%
Product Preference	Apparel, Shoes, and Accessories	156	58.6%
	Electronics and Gadgets	17	6.4%
	Makeup and Fragrances	21	7.9%
	Health and Personal Care	16	6.0%
	Home & Kitchen	1	0.4%
	Books & Stationery	11	4.1%
	Toys & Baby Products	3	1.1%
	Other Products	41	15.4%

The distribution of e-commerce platforms and product preferences is presented in Table 5, which revealed that Shopee is the most preferred by Generation Z respondents when making an online impulsive

purchase. This is supported by the study of Said et al (2023), which found that the popularity of Shopee is mainly due to its attractive promotional offers and discounts on its products. While the most preferred products bought by Generation Z consumers during flash sales are apparel, shoes, and accessories (58.6%), this is supported by the study of Faflek and Kramoliš (2024) which found that clothes and fashion products are the most impulsively purchased items by Generation Z consumers. As Generation Z consumers emphasize individuality and self-expression, they see fashion as a way to show their identity by choosing diverse and personal styles (Lu, 2024). This is also consistent with the findings that the main motivation of Generation Z consumers in making purchases was their concern about having an outdated wardrobe (CGS, 2021).

The online shopping behavior of Generation Z shoppers is shown in Table 6. The online purchase frequency in the last 6 months showed that consumers purchased 1-2 times (42.9%), followed by 3-5 times (36.1%). The flash sale spending was below PHP 500 (62.4%), followed by PHP 501 – PHP 1,000 (26.7%). This suggests that many Generation Z shoppers tend to keep their spending within a lower range. A survey revealed that half of a typical Filipino Generation Z's finances come from parental allowances, with the remaining half coming from full-time work, businesses or side gigs (District 2024). The frequent flash sale participation by Generation Z shoppers was through discount-based promotions (68.4%), time-limited promotions (25.9%), and limited quantity promotions (5.6%). The findings suggest that Gen Z shoppers prefer discount-based promotions that influence their buying decisions. This is supported by the study of Secretaria et al. (2023), which stated that regular discounts can trigger behavioral tendencies that encourage Gen Z shoppers to buy. Jamal & Lodhi (2015) also stated that when products are offered at discounted prices, consumers make more impulsive purchases than the original price of the products.

Table 6
Frequency and Percentage Distribution of Online Shopping Behavior

Behavior Type	Sub-category	Frequency	Percentage
Online Purchase Frequency	1 – 2 times	114	42.9%
	3 – 5 times	96	36.1%
	6 -10 times	30	11.3%
	11 – 15 times	13	4.9%
	16 – 20 times	7	2.6%
	More than 20 times	6	2.3%
Flash Sale Spending	Below PHP 500	166	62.4%
	PHP 501 – PHP 1,000	71	26.7%
	PHP 1,001 – PHP 2,000	15	5.6%
	PHP 2,001 – PHP 3,000	5	1.9%
	More than PHP 3,000	9	3.4%
Frequent Flash Sale Participation	Time-limited promotions	69	25.9%
	Limited quantity promotions	15	5.6%
	Discount-based promotions	182	68.4%

Association Results between Socio-Demographic Factors and Impulse Buying Behavior

Table 7 shows that variations in demographic characteristics have no significant relationship with impulse buying behavior, as the p-values for each demographic variable are above the standard significance threshold of 0.05. The Mann-Whitney U Test result for gender ($p = 0.213$) also did not have a significant effect, implying that there is no strong evidence of gender-based differences in impulse buying behavior. This is supported by the study of Aqmarina & Wahyuni (2019), which revealed that gender does not affect impulse buying; there was no significant difference between Generation Z men and women when making impulse buying decisions. Similarly, the Kruskal-Wallis test results for age ($p = 0.922$),

educational attainment ($p = 0.378$) and income level ($p = 0.207$) were not significant predictors of impulse buying behavior. The results of this study are consistent with the findings of Basalma (2024) which showed that both age and income did not reveal a significant association with impulse buying behavior among college students. Also, a study conducted by Hejase et al. (2018) showed that educational level has no significant impact on impulse buying behavior. However, this contrasts with (as Basalma (2024), who found out that educational level has a significant influence on online impulse buying behavior of Generation Z consumers. Overall, results show that the demographic characteristics alone do not fully explain the impulsive buying behavior among Generation Z consumers.

Table 7

Association Between Demographic Characteristics and Impulse Buying Behavior

Demographic variable	Test Used	Test Statistic	p-value	Interpretation
Gender	Mann-Whitney U Test	7854	0.213	No significant relationship
Age	Kruskal-Wallis Test	$\chi^2 = 0.161$	0.922	No significant relationship
Educational Attainment	Kruskal-Wallis Test	$\chi^2 = 7.51$	0.378	No significant relationship
Income	Kruskal-Wallis Test	$\chi^2 = 9.68$	0.207	No significant relationship

Mediation Analysis

Table 8 shows that flash sale promotions significantly predict impulse buying behavior ($SE = 0.0860$, $\beta = 0.188$, $p = 0.029$). The result was consistent with the findings of Wijianto et al. (2024), which also indicated that flash sale promotions have a significant effect on impulsive buying behavior among Gen Z consumers. Second, linear regression was also performed to test whether flash sale promotions influence fear of missing out (FOMO). The results showed that flash sale promotions significantly predict fear of missing out ($SE = 0.1033$, $\beta = 0.506$, $p < .001$). This is in line with the study conducted by Martaleni et al. (2022), which found that flash sales have a significant effect on the emotions (fear) of the consumers, and that consumers tend to act emotionally when flash sale promotions take place. Next, a regression analysis was conducted to test whether the fear of missing out influences impulsive buying behavior. The results revealed a significant positive effect ($SE = 0.0523$, $\beta = 0.632$, $p < .001$). Previous research by Rana Deliana et al. (2024) found that fear of missing out had a strong and significant influence on impulse purchases of Gen Z shoppers. This is in line with the study findings of Çelik and Eru (2019), who found that fear of missing out is positive and significant in impulse buying. These findings are consistent with the social influence theory, as the behavior of the consumers is influenced by external stimuli such as peer behavior and influencers. According to Tabari and Ding (2024), consumers who follow online influencers driven by FOMO tend to make impulse purchases when experiencing pressure from social comparisons, virtual trends, and scarcity cues.

Finally, a test for mediation was conducted to determine whether fear of missing out mediates the relationship between flash sale promotions and impulse buying behavior. The results showed that fear of missing out mediates the relationship between flash sale promotions and impulse buying behavior ($SE = 0.1016$, $\beta = 0.508$, $p < .001$). This means that flash sale promotions are directly and indirectly related to impulse buying behavior through fear of missing out. This relationship is effectively explained through the Stimulus-Organism-Response Theory (SOR) Theory. Flash sale promotions served as the stimulus (S) which triggered the fear of missing out (O), causing impulsive buying behavior among Generation Z. Also, the results extend the application of the Theory of Social Influence by showing that peers and online

influencers contribute to the emotional trigger behind impulsive consumption among Gen Z. The results suggest that Generation Z consumers who are influenced by flash sale promotions also tend to experience fear of missing out, which in turn increases their likelihood of engaging in impulsive buying behavior.

Table 8

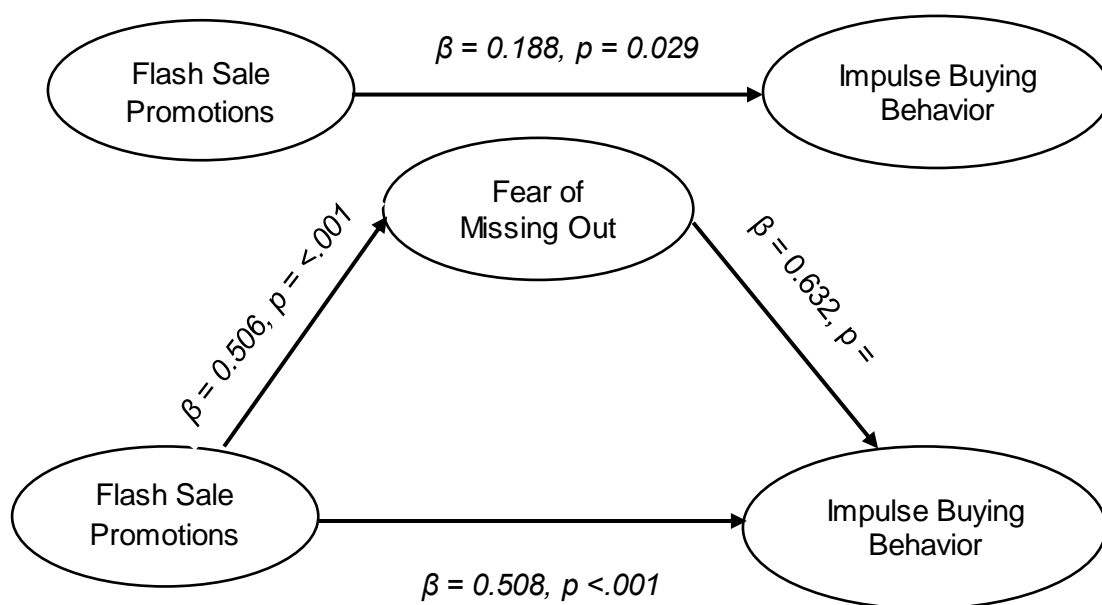
Path Coefficients and Mediation Analysis Results

Effects	SE	β	p-value	Decision
Direct				
FSP \rightarrow IMB	0.0860	0.188	0.029	Accept
FSP \rightarrow FOMO	0.1033	0.506	<.001	Accept
FOMO \rightarrow IMB	0.0523	0.632	<.001	Accept
Indirect				
FSP \rightarrow FOMO \rightarrow IMB	0.1016	0.508	<.001	Accept

The final model results are also presented, which can be seen in Figure 1, illustrating the summary results and relationships between flash sale promotions, fear of missing out (FOMO), and impulse buying behavior. The figure presents that FOMO served as a mediating factor because it explained the psychological process through which flash sale promotions influence the impulse buying behavior of Generation Z. FOMO creates a psychological phenomenon that results in consumers feeling pressured, thus making quick decisions. This effect is amplified in real-world e-commerce settings like Shopee, Lazada, Temu, SHEIN, etc., by promotional offers like countdown timers, stock indicators, and pop-up flash discounts, which make consumers engage in impulsive purchases. Thus, the S-O-R model helps explain the psychological mechanism through which flash sale promotions influence the impulse buying behavior of Gen Z consumers.

Figure 1

Results of the Mediation Analysis



Conclusion

A number of the Gen Z impulse buyers were young adults aged 18 to 22 years, mostly female,

and college students with low incomes, suggesting that this demographic group is budget-conscious but actively engaged in impulse buying behavior. The strong preference for Shopee as their top choice suggests that marketers and businesses should focus on using it for marketing and flash sale campaigns. To increase reach, they should also utilize or be present on e-commerce platforms like Lazada and SHEIN. Purchasing apparel, shoes, and accessories is very common, which shows how appealing fashion-related categories are to this market segment. Moreover, the low spending amounts, particularly those below PHP 500, and the frequency of purchases, which range from one to five times over six months, indicate the cautious spending behavior of Gen Z consumers. This implies that Gen Z consumers are selective, and value-driven. Therefore, online businesses and marketers must design flash sale promotions that emphasize affordability, trendiness, and a sense of urgency by adding tools like countdown timers, "only a few items left" messages, and pop-up alerts to remind online users of limited time and limited quantity offers. These should be based on real information, not misleading urgency.

The study's results also revealed that demographic variables did not influence impulse buying tendencies. Instead, marketers need to focus on the emotional trigger (FOMO) and promotions (discount-based) to create more effective and higher engagement among Gen Z consumers. Additionally, the study's findings suggest that the fear of missing out (FOMO) mediates the relationship between flash sale promotions and the impulse buying behavior of Generation Z consumers. This shows that urgency messaging must be carefully crafted to avoid misleading or exaggerating, which could negatively impact consumer trust and brand credibility.

The results of the study align strongly with the Stimulus-Organism-Response (SOR) Theory, which shows that external factors influence the emotional state, which in turn affects the behavior. In this context, flash sale promotions served as the stimulus, triggering fear of missing out as the organism, which led to the impulse buying behavior of Generation Z as the response. The purchasing decisions of Generation Z are influenced by flash sale promotions through an emotional pathway that is confirmed by the strong mediation of FOMO. Moreover, the findings also support the Theory of Social Influence, as the urgency influenced by flash sales may be increased by social cues, such as those from peers or influencers, which intensify the fear of being left out among consumers. Although social influence was not directly assessed in this study, instead, it was incorporated under FOMO, which intensified the impulse buying decisions by Generation Z consumers.

Recommendations

Based on the study findings, marketers should use FOMO-based strategies and discount-based promotions to attract more consumers and create a sense of urgency that influences impulsive buying behavior. These promotions should emphasize affordability and perceived value, aligning with Generation Z's expectation of "good value for their money" and their preference for inexpensive yet trendy products. Online businesses and marketers should focus on providing value and benefits of the product/service they offer. Also, marketing strategies must be implemented ethically. A strategy may be considered manipulative if it intentionally exaggerates the urgency or misleads product information. Such practices will have a negative impact on consumer purchasing behavior and brand credibility. Marketers are encouraged to apply specific urgency techniques such as real-time countdowns, flash sale alerts, and limited stock notifications. Misleading scarcity cues should be avoided. Ethical digital marketing builds trust and promotes long-term engagement.

For further studies, it is recommended to study how flash sale promotions affect other generations, such as Generation X and Millennials. This would help identify whether fear of missing out also acts as a mediator in their impulsive buying behavior. Also, their demographic characteristics have a significant influence on their impulse buying behavior. Including other generations in the study would help online

businesses better understand the impulsive buying behavior of online shoppers and develop effective marketing strategies for different age groups.

Since the data collection in the study was conducted through an online platform, there are limitations to the generalizability of the findings. Future research should collect both offline and online data samples to provide a more comprehensive understanding of the impulse-buying behavior of Gen Z. Also, incorporating a qualitative research method such as in-depth interviews and focus groups to determine underlying factors that surveys might not capture. These steps will be helpful in getting reliable results and making effective strategies for consumers.

For policymakers and consumer protection groups, it is essential to provide information and educate young consumers, particularly Generation Z, about the effects of impulsive buying and how flash sale promotions influence their decisions. This would make them informed and responsible online shoppers.

Future studies should also explore how the specific features such as website design, perceived ease of use, visual appeal, etc. of popular e-commerce platforms like Shopee, affect the sense of urgency and fear of missing out. Additionally future research may assess how influencer marketing and social proof features (e.g., “100 people bought this in the last hour”) contribute to FOMO and impulse purchases. Understanding how these tools influence buying behavior can help online businesses create more effective and responsible marketing strategies.

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